

AMENDMENT TO THE CLAIMS

Please cancel claims 1, 2, 4-6, 9, 10, 12-16, 19 and 20 without prejudice and add new claims 21-39 as follows:

Claims 1-20 (cancelled)

21. (new) A method of operating an oil burner, comprising the steps of:

a) providing a source of oil;

b) providing a source of heated liquid;

c) providing a manifold constructed of a thermally transmissive material and having first, second and third internal passageways formed into said material, and supporting a nozzle having an oil distribution port to said manifold to either block or unblock an outlet port of said third passageway;

e) coupling said sources of said oil to said first passageway and said heated liquid to said second passageway, wherein said first passageway communicates with said oil distribution port, and wherein said first, second and third passageways are arranged in said manifold such that heat from said heated liquid is transferred through said manifold to elevate the temperature of said oil immediately prior to being admitted to said nozzle; and

f) igniting the hot oil upon discharge from said oil distribution port.

22. (new) A method as set forth in claim 21 including the step of providing a source of pressurized air; coupling said source of pressurized air to said third passageway; providing said nozzle with air atomizing ports and supporting said nozzle in an unblocked condition relative to the outlet port of said third passageway such that said

pressurized air communicates with said atomizing ports, and whereby said heated oil is atomized with heated air upon discharge from said nozzle.

23. (new) A method as set forth in claim 22 wherein said first, second and third passageways are arranged within said manifold in displaced tiers, wherein said first passageway includes a portion that transects said second tier and communicates with a first cavity that aligns to said oil distribution port, wherein said third passageway communicates with a second cavity concentrically aligned to said first cavity that supports said nozzle.

24. (new) An oil burner assembly, comprising:

a) a manifold i) constructed of a thermally transmissive material, ii) having first, second and third internal passageways defined in the material, and iii) supporting a nozzle having an oil distribution port and an atomizing port;

b) sources of oil, air and a heated liquid coupled to said respective first, second and third passageways, wherein said first, second and third passageways are arranged in said manifold such that heat from said heated liquid is transferred through said manifold to elevate the temperature of said oil and said air, wherein said first passageway communicates with said oil distribution port, wherein said second passageway communicates with said atomizing port, such that heated oil discharged from said nozzle is atomized by heated air discharged from said atomizing port; and

c) an igniter mounted to said manifold and aligned to said nozzle to ignite hot atomized oil upon discharge from said nozzle.

25. (new) An oil burner assembly as set forth in claim 24 wherein said first, second and third passageways are arranged within said manifold in displaced tiers,

wherein said first passageway includes a portion that transects said second tier and communicates with a first cavity that aligns to said oil distribution port, wherein said third passageway communicates with a second cavity concentrically aligned to said first cavity that supports said nozzle.

26. (new) An oil burner assembly as set forth in claim 24 wherein said first passageway includes a convoluted portion, a riser portion coupled to said convoluted portion that transects a portion of said second passageway and a distal first cavity that aligns with said oil distribution port.

27. (new) An oil burner assembly as set forth in claim 26 wherein said third passageway includes a distal second cavity that aligns with said atomizing port and wherein air admitted to the second cavity is isolated from oil admitted to the first cavity.

28. (new) An oil burner assembly as set forth in claim 24 including a plurality of said atomizing ports, wherein said source of air is pressurized, and wherein a plurality of said atomizing ports direct the heated air to mix with and shape the hot discharged oil into a conical shape.

29. (new) An oil burner assembly as set forth in claim 24 including a fan mounted to mix the hot, atomized oil discharged from said nozzle with combustion air and shape the mixture into a spiral shape.

30. (new) An oil burner assembly as set forth in claim 24 wherein said second passageway includes at a narrowed region whereat the heated air is compressed prior to being admitted to a cavity concentrically aligned to said atomizing ports.

31. (new) An oil burner assembly as set forth in claim 24 wherein said first, second and third passageways are formed into a substantially solid body that defines said manifold.

32. (new) An oil burner assembly as set forth in claim 24 wherein said first and third passageways terminate in first and second cavities, wherein said oil distribution port mounts in said first cavity, wherein a seal isolates heated oil from said second cavity, and wherein a narrowed region of said third passageway communicate with said second cavity.

33. (new) An oil burner assembly, comprising:

a) a manifold i) constructed of a thermally conductive material, ii) having first, second and third internal passageways defined in the material, and iii) supporting a nozzle having an oil distribution port and an atomizing port, wherein said first passageway includes a convoluted portion, a riser portion coupled to said convoluted portion that transects a portion of said second passageway and a distal first cavity that aligns with said oil distribution port, and wherein said third passageway includes a distal second cavity that aligns with said atomizing port;

b) sources of oil, air and a heated liquid coupled to said respective first, second and third passageways, wherein said first, second and third passageways are arranged in said manifold such that heat from said heated liquid is transferred through said manifold to elevate the temperature of said oil and said air, such that heated oil discharged from said nozzle is atomized by heated air discharged from said atomizing port; and

c) an igniter mounted to said manifold and aligned to said nozzle to ignite hot atomized oil upon discharge from said nozzle.

34. (new) An oil burner assembly as set forth in claim 33 and wherein air admitted to the second cavity is sealed from oil admitted to the first cavity.

35. (new) An oil burner assembly, comprising:

- a) a manifold i) constructed of a thermally transmissive material, ii) having first, second and third internal passageways defined in the material, and iii) supporting a nozzle having an oil distribution port;
- b) sources of pressurized oil and a heated liquid coupled to said respective first and second passageways, wherein said third passageway is adapted to couple to a source of air, wherein said first, second and third passageways are arranged in said manifold such that heat from said heated liquid is transferred through said manifold to elevate the temperature of said oil, and wherein said first passageway communicates with said oil distribution port, such that pressurized, heated oil is discharged from said nozzle; and
- c) an igniter mounted to said manifold and aligned to said nozzle to ignite hot oil upon discharge from said nozzle.

36. (new) An oil burner assembly as set forth in claim 35 including an oil pump for pressurizing the heated oil discharged from said nozzle and wherein said nozzle mounts to align with and block said third passageway.

37. (new) An oil burner assembly as set forth in claim 35 wherein said first passageway includes a convoluted portion, a riser portion coupled to said convoluted portion that transects a portion of said second passageway and a distal first cavity that aligns with said oil distribution port.

38. (new) An oil burner assembly as set forth in claim 35 including a source of pressurized air mounted to said third passageway, wherein said nozzle includes an

atomizing port, wherein heated air from said third passageway is directed to said atomizing port, such that hot atomized oil is discharged from said nozzle.

39. (new) An oil burner assembly as set forth in claim 35 wherein said third passageway includes a distal second cavity that aligns with said atomizing port and wherein air admitted to the second cavity is sealed from oil admitted to the first cavity.